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In Cooperation with State, Federal and other Agencies

COTTON INSECT CONDITIONS FOR WEEK ENDING JULY 5, 1947
(Sixth Cotton Insect Survey Report for 1947)

The boll weevil situation continues serious in North Carolina, South Carolina, Georgia, Alabama, and Mississippi, and in some areas in Louisiana, Arkansas, Texas, and Oklahoma. All cotton growers should be prepared to treat their cotton with insecticides when the weevils become abundant.

No additional cotton leafworm infestations were reported during the week. Leafworms were reported in Nueces County, Texas, June 21 and in Calhoun County, Texas, June 30.

INSECTICIDES

TEXAS: In examining cotton fields for insect conditions, the use of insecticides was noted for the control of the boll weevil in a number of fields and for the control of the cotton fleahopper in still others. Most of these fields were located in the south central and Coastal Bend areas of the State.

O. T. Robertson, Presidio, reports: "On June 26 about 300 acres of cotton were dusted with a mixture of 10% DDT and 50% sulfur. The dust was applied by airplane at the rate of approximately 10 pounds per acre."

OKLAHOMA: C. F. Stiles, Extension Entomologist, Stillwater, reported on July 7: "Interest is running high now in cotton insect control."

NORTH CAROLINA: James T. Conner, Jr., Extension Entomologist, reported on July 5: "Some counties report a shortage of calcium arsenate, but no shortage of equipment has been reported."

LOUISIANA: R. C. Gaines, Tallulah, reported that "weevil infestations are general, and weevils are present in sufficient numbers to cause severe injury if weather conditions should be favorable for their development during the remainder of the season. All cooperating agencies are trying to prevent waste of the limited supplies of calcium arsenate by urging farmers not to start general poisoning now. Spot poisoning, of course, should be started in some areas."

BOLL WEEVIL

NORTH CAROLINA: Rainy weather was favorable for weevil development and crop growth throughout the Coastal Plains region. The average square infestation in 106 fields in 17 counties was 29%. Weevil infestation was found in all fields examined. In 11 fields the infestation was less than 10%; in 36 fields the infestation was from 10 to 25%; in 44 fields it was from 25 to 50%; and in 15 fields in Johnson, Sampson, Wayne, Pitt, Wilson, Scotland, Hoke, and Robeson Counties more than 50% of the squares were punctured. Boll weevils are apparently more abundant in North Carolina now than during early July in any recent year.

SOUTH CAROLINA: Weather conditions during the week were favorable for cotton growth and boll weevil development over most of the State. Parts of Florence, Darlington, Chesterfield, Marlboro, and Dillon counties are suffering from a drouth, and even though temperatures have not been excessively high there has been a high percentage of boll weevil mortality in fallen squares, which has done much to reduce boll weevil damage. In other sections of the State, there has been sufficient moisture to prevent heavy weevil mortality in fallen squares and first-generation boll weevils are emerging in large numbers.

The 1/5-acre trap plot near Florence was examined for the last time on June 30 when 19 boll weevils were collected, bringing the total for the season to 1,065. This does not quite equal the total of 1,115 over-wintered weevils collected in this plot in 1941, but is nearly three times last year's total of 365 weevils.

Boll weevils were found in all of the 105 fields examined in 15 counties. Fields with more than 50% of the squares punctured were found in Abbeville, Laurens, Fairfield, Chester, York, Lancaster, and Sumter Counties. Fields with infestations ranging from 10 to 25 percent punctured squares were examined in McCormick, Greenwood, Newberry, Kershaw, Lee, Saluda, Edgefield, and Florence Counties. The lowest average infestation was in Florence County where an average of 17.5% of the cotton squares were punctured in the 19 fields examined. Florence is in the Lower Coastal Plains, and part of it is in the wake of a severe drouth which probably accounts for the reduction from an average of 23.1% infested squares during the previous week.

C. R. Jordan, Jr., of the Agricultural Extension Service, Clemson, stated on July 7 that the boll weevil continues to inflict heavy damage on cotton throughout the State. Reports from county agents covering 175 fields in 36 counties show an average of 800 weevils per acre and 25% punctured squares, as compared to 810 weevils per acre and 23% punctured squares last week. Mr. Jordan urges farmers to dust their fields when 10% or more of the squares are punctured and to continue dusting until a crop of bolls is set. County agricultural agents report finding fields with more than 50% punctured squares in Bamberg, Barnwell, Edgefield, Fairfield, Greenwood, Lexington, Oconee, Union, and York Counties. The infestations vary greatly and many fields were examined in which less than 10% of the squares were punctured. No weevils were found in 3 fields located in Dillon, Greenwood, and Horry Counties.

GEORGIA: There has been little change in the boll weevil situation during the past week. Weevils were found in all of the 59 fields examined in 23 counties. The highest infestations reported were in the two fields examined in Irwin County where 34 and 38% of the squares were punctured. Single fields with 30% punctured squares were reported from Macon and Terrell Counties. Fields with infestations higher than 20% punctured squares were reported from Ben Hill, Tift, Baldwin, Hancock, Putnam, and Warren Counties. Apparently the boll weevil situation in Georgia is only slightly less serious now than it was a year ago at this time. The infestations are spotted and in 21 of the fields examined, most of them in the southern part of the State, less than 10% of the squares were punctured. In the Piedmont counties the weevils are apparently abundant in all fields and the situation will become very serious if weather conditions are favorable for the weevils.

FLORIDA: P. W. Calhoun, Gainesville, reports that no weevils were found in the examination of two fields in Columbia County, but no cotton had been grown close to these fields last year. In three experimental fields in Alachua County the boll weevil infestations during the past three weeks have been as follows:

	Percent Squares Punctured		
	Week Ending June 21	Week Ending June 28	Week Ending July 5
Field No. 1	30	41	10*
Field No. 2	11	18	0*
Field No. 3	8	10	43

*These fields had been dusted during the week under favorable weather conditions.

ALABAMA: Dr. F. S. Arant, Entomologist, Agricultural Experiment Station, Auburn, wrote on June 30: "The boll weevil continues to be found in large numbers. Our population counts made at McQueen-Smith Farms, Prattville, Alabama, about 10 days ago showed populations as high as 1320 adults per acre. The lowest counts were around 300. A high percentage of the squares are now being punctured since the cotton is beginning to fruit. In some sections, however, where the cotton is fruiting very rapidly, the percentage of punctured squares has dropped to low levels, less than 10 percent in some instances."

W. A. Ruffin, Extension Entomologist, Auburn, reported that he spent one day in Elmore County and received a report from the county agent in Fayette County. The infestations in these counties are running as high as 75% punctured squares. He is advising the farmers in central and south Alabama to start dusting as soon as possible.

MISSISSIPPI: On July 7, Dr. Clay Lyle, Entomologist of the State Plant Board and Experiment Station, stated that the cotton insect situation in Mississippi is the most threatening in several years. This statement was based on the results of examinations of 268 cotton fields in 33 counties. Weevils were found in 166 of the fields with an average of 25% of the squares punctured, as compared to 24% last week and 13% on this date last year. The average for all farms examined was 15% punctured squares, as compared to 9% last year at this time. Fields with more than 80% of the squares punctured were reported in Chickasaw, Warren and Yazoo Counties. Other counties in which fields were reported with more than 40% of the squares punctured are Attala, Choctaw, Holmes, Jones, Lafayette, Lamar, Panola, Sharkey, Tate, and Winston Counties.

In 13 Delta counties weevils were found in only 76 of the 177 fields examined. No weevils were found in the 8 fields examined in Quitman County, and in all the Delta counties except Holmes, Issaquena, Sharkey, Warren, and Yazoo, a majority of the fields examined were still free of weevils. More than 50% of the squares were punctured in only 9 fields and 101 of the 177 fields examined were free of weevils. During the week weevils were found in only 40% of the fields examined in the Delta counties as compared to 54% a year ago, but the infestations are higher this year in the infested fields than they were last year.

A year ago the average infestation in 74 fields where weevils were found was 9% punctured squares, while during the past week there was an average of 23% punctured squares in 51 fields where weevils were found in Delta counties.

B. J. Young of the Delta and Pine Land Company, Scott, reported that weevils were found in 123 of 129 fields examined in the southern part of Bolivar County. Only 6 fields were apparently free of weevils, but only one field had more than 51% of the squares punctured.

In the southern Delta counties boll weevils are very abundant. In Warren County all of the 9 fields examined had infestations that varied from 20 to 80% punctured squares. Only 3 fields had less than 40% punctured squares. In Yazoo County weevils were found in 9 of the 10 fields examined. In 5 fields infestations varied from 50 to 84% punctured squares. Weevils were found in 10 of the 12 fields examined in Issaquena County, but the highest infestation was 38% punctured squares. Weevils were found in 11 of the 21 fields examined in Sharkey County, where the highest infestation was 46% punctured squares.

LOUISIANA: There was little rain in the State and temperatures were favorable for crop growth. The average boll weevil infestation in 186 fields in 11 parishes was 15% as compared to 24% punctured squares at this time a year ago. No punctured squares were found in 8% of the fields. In 50% of the fields less than 10% of the squares were punctured; in 24% of the fields the infestation was from 10 to 25%; in 13% of the fields it was from 25 to 50%; and in 5% of the fields more than 50% of the squares were punctured. The heaviest infestations were reported from Caddo, Bossier, Red River, Madison, Natchitoches, and Rapides Parishes.

Boll weevil survival in hibernation cages at Tallulah, as indicated by the percent of weevils emerging in the cages between May 1 and July 3 during the past 16 years, has been as follows:

Year	Percent Survival	Year	Percent Survival	Year	Percent Survival	Year	Percent Survival
1947	1.84	1943	.98	1939	1.94	1935	.48
1946	9.24	1942	.08	1938	.76	1934	4.24
1945	15.10	1941	17.00	1937	18.22	1933	.44
1944	2.34	1940	.02	1936	.12	1932	15.54

ARKANSAS: In general, weather conditions were favorable for weevil development and crop growth. Examinations made in 22 fields that had not set sufficient squares for infestation counts in 6 counties in the southeastern section of the State averaged 177 weevils per acre. In 27 other cotton fields in this area, in which the cotton was large enough for square counts, the average infestation was 13%. In 4% of the fields no punctured squares were found; in 52% of the fields the infestation was less than 10%; in 29% of the fields it was from 10 to 25%; in 11% of the fields it was from 25 to 50%; and in 4% of the fields more than 50% of the squares were punctured. The heaviest infestations were found in Lincoln, Chicot and Desha Counties.

Dr. Charles Lincoln, Extension Entomologist, Fayetteville, reported that the average weevil infestation in 7 fields in Pulaski County in the central part of the State was 41%, ranging from 20 to 80%; and in the southwestern corner of the State in 4 fields in Miller County the average infestation was 44%, ranging from 12 to 100%; and in 3 fields in Lafayette County the average infestation was 19%, ranging from 9 to 35% punctured squares.

TEXAS: Hot, dry weather prevailed generally throughout the State and boll weevils are still comparatively scarce in most areas. The average infestation in 566 fields in 36 counties was 15%. In 75 fields no punctured squares were found; in 177 fields less than 10% of the squares were punctured; in 176 fields the infestation was from 10 to 25%; in 112 fields it was from 25 to 50%; and in 26 fields in Lamar, Grayson, McLennan, Burleson, Wharton, Fort Bend, Cameron, and Hidalgo Counties more than 50% of the squares were punctured.

Although dry, hot weather has hastened the maturity of much of the cotton in the Lower Rio Grande Valley of Texas and has resulted in heavy shedding in some sections, prospects continue to look favorable for a good crop of cotton in that area. In the Counties of Cameron, Hidalgo and Willacy, where all the cotton stalks were cut and plowed under by August 31, 1946, insects have caused little damage to the cotton crop this season. No weevils were found in 28 of the 77 fields examined during the week ending July 4, and in 30 of the other fields less than 10% of the squares were punctured. Of the 19 fields that had more than 11% of the squares punctured there were 8 fields with less than 25% punctured squares, 9 fields with less than 50% punctured squares, and only 2 fields with over 50% infestation. The average boll weevil infestation in all fields examined was 14% punctured squares in Cameron County, 12% in Hidalgo County, and 2% in Willacy County.

In McLennan and Falls Counties in central Texas boll weevils are not as abundant as they were a year ago at this time, but they are apparently about as abundant or more abundant than they were at this time during the five previous years. The records on which this statement is based are summarized in the following table:

Year	No. of Fields Examined	Percent Punctured Squares	Range in % Punctured Squares in Different Fields
1947	22	23.2	2.0 - 61.0
1946	19	70.9	21.0 - 94.7
1945	22	13.6	0 - 51.0
1944	12	24.1	1.0 - 39.7
1943	17	6.6	0.3 - 16.0
1942	57	18.9	2.0 - 49.0
1941	38	23.9	5.0 - 66.0

OKLAHOMA: The cotton is still too small in many areas to make square infestation counts. In 96 fields in 12 counties the weevil populations averaged 218 weevils per acre with more than 300 per acre in Caddo County, over 500 in Creek County, and over 600 per acre in Garvin County. In 41 fields in 9 counties the average square infestation was 22%. No weevils were found in 3 of the fields examined; in 8 fields less than 10% of the squares were punctured; in 17 fields the infestation was from 10 to 25%; in 11 fields the infestation was from 25 to 50%; and in 2 fields in Cleveland and Garvin Counties more than 50% of the squares were punctured.

Heavy infestations were found in Cleveland, Creek, McClain, Grady, Okmulgee, Muskogee, Sequoyah, McIntosh, Pittsburg, Caddo, and Garvin Counties.

C. F. Stiles, Extension Entomologist, Stillwater, stated on July 7 that boll weevils are as abundant this year in eastern and southern Oklahoma as they were in 1945 and 1946. (The Bureau of Agricultural Economics estimated that the boll weevil caused a reduction from full yield per acre of 13% in 1945 and 11% in 1946.)

COTTON FLEAHOPPER

TEXAS: On July 3, K. P. Ewing reported: "Fleahoppers continue to do damage in most fields inspected in McLennan and Falls Counties. The hot, dry weather has decreased the hatching of nymphs, but adult populations are heavy in many fields." Comparisons at this date during previous years are as follows:

Year	No. of Fields Examined	Average No. Fleahoppers per 100 Terminals	Range in No. of Fleahoppers per 100 Terminals in Different Fields
1947	25	29.9	3.5 - 89.0
1946	31	4.7	0 - 20.8
1945	28	1[illegible].3	0 - 48.0
1944	19	29.0	6.8 - 58.0
1943	6	12.5	2.1 - 21.3
1942	52	8.2	0.3 - 37.0
1941	22	7.0	0.5 - 20.0

Cotton fleahoppers were found in 460 of the 494 fields examined in 36 counties. In 243 fields less than 10 fleahoppers were found per 100 terminal buds; in 119 fields between 11 and 25 fleahoppers per 100 terminal buds; in 89 fields the rate varied from 26 to 50 fleahoppers; and in only 9 fields were they found at the rate of more than 50 fleahoppers per 100 terminals examined.

OKLAHOMA: C. F. Stiles states: "So far fleahoppers have been only of minor importance; however, they are increasing in numbers in a few counties." Examinations were made in 115 cotton fields in 12 counties; fleahoppers were found in all counties, but in only 45 of the fields.

LOUISIANA: Scattered cotton fleahopper infestations are reported in the northwest section of the State.

ARKANSAS: Cotton fleahopper infestations are reported in some areas in the southwestern part of the State.

MISSISSIPPI: Cotton fleahoppers were reported knocking off all small squares in some localities in Lafayette and Panola Counties.

ARIZONA: On June 25, W. A. Stevenson reported the cotton fleahopper as unusually abundant in Pinal and Pima Counties. On July 7, the Cortaro Farms Company, Pima County, reported they had started airplane dusting with 5% DDT in sulfur for cotton fleahopper control.

BOLLWORM

TEXAS: K. P. Ewing reported a few bollworm eggs and larvae on cotton in Falls and McLennan Counties, but no real infestation or damage was noted or reported.

In the examination of 566 fields in 36 counties in the eastern half of the State, bollworms were reported in 92 fields in 21 counties, but no serious infestations have yet been reported.

LOUISIANA: In most fields, first generation bollworms are too large for successful poisoning. However, in a few fields, there were sufficient small worms and eggs to require poisoning. Bollworm eggs are not as numerous now as they were from 1 to 2 weeks ago.

COTTON APHID

MISSISSIPPI: No reports of heavy infestations of the cotton aphid were received from Mississippi.

TEXAS: In the examination of 566 fields in 36 counties light infestations of the cotton aphid were reported in 290 fields, medium infestations in 8, and heavy infestations in 3 fields in San Patricio County.

OKLAHOMA: Light to heavy cotton aphid infestations were reported in Cleveland, McClain, Grady, McIntosh, and Caddo Counties.

MISCELLANEOUS INSECTS

Sweetpotato Leaf Beetle (Typophorus viridicyaneus (Cr.): Early in June, C. W. Carraway, County Agricultural Agent, Charleston, S.C., referred to this bureau beetles collected on cotton, that were identified by H. S. Barber of the Division of Insect Identification as Typophorus viridicyaneus. On June 27, W.W. Stanley, Associate Entomologist, Agricultural Experiment Station, Knoxville, Tenn., submitted some of these beetles (that were also identified by Mr. Barber), with the statement that they had destroyed a 10-acre field of cotton at Cleveland (Bradley County), Tenn. He stated that the beetles were also destroying sweetpotato plants. This species has been known as the sweetpotato leaf beetle and has usually been associated with that plant. Mr. Barber states that the wild morning-glory is the original host of this insect. It is not likely that these beetles will become seriously injurious to cotton, except when it is planted in fields where large numbers of the beetles have developed on the roots of wild morning-glory or sweetpotato. This insect is discussed in U.S.D.A. Circular No. 495, "The Sweetpotato Leaf Beetle," by L. W. Brannon.

Tarnished Plant Bug and Rapid Plant Bug: In 13 cotton fields in Madison Parish in northeastern Louisiana there was an average of 8.5 tarnished plant bugs and 2.7 rapid plant bugs per 100 sweeps with a net.

E. W. Dunnam and S. L. Calhoun report that in 130 fields examined in 13 Mississippi Delta counties the rapid plant bug, Adelphocoris rapidus (Say), was noted in 33 fields; the tarnished plant bug, Lygus oblineatus (Say), in 23 fields; the cotton fleahopper, Psallus seriatus (Reut.), in 11 fields; Neurocolpus spp. in 4 fields, and bollworms in 12 fields.

B. J. Young, Scott, Bolivar County, Miss., reports: "Webworms seem to be abating but are still in alfalfa. Some cotton is showing effects of early thrips damage. Lygus seem pretty plentiful. A few cuts show hopper damage. Some bollworms have been reported."

The rapid plant bug is numerous enough in most cotton fields in Falls and McLennan Counties, Texas, to do considerable damage.

P. W. Calhoun states that the populations of the rapid plant bug in Florida are building up.

Grasshoppers: Grasshoppers continue to cause damage along margins of cotton fields in many areas of central Texas. Distribution of poison baits along field margins is being continued.

Grape Colaspis (Colaspis flavida (Say)): The grape colaspis has been unusually abundant in many fields in central and northern Louisiana.

INSECTS ON IRRIGATED COTTON OF THE SOUTHWEST

ARIZONA: Injurious hemipterous insect populations, principally Lygus spp., increased in many cotton fields in the Salt River Valley. The greatest increases were in the Buckeye area. In some fields from 40 to 50 Lygus spp. per 100 net strokes were found. In most of the fields where counts are high, spraying or dusting with DDT has been started.

In the Santa Cruz Valley, Lygus spp., cotton fleahoppers, and stink bugs are increasing in numbers. In several fields cotton fleahoppers were as high as 40 to 45 per 100 net strokes. Very little damage was noted but on July 7, the Cortaro Farms Company reported they had started airplane dusting for cotton fleahopper control.

Beet Army Worm (Laphygma exigua (Hbn.)): Beet army worms were noted in some cotton fields in Pima County, but not in numbers to cause alarm.

S. L. Owen, County Agent, Graham County, Safford Valley, reported June 26: "Sucking insect infestations vary considerably from field to field. Counts made showed from 0 to 25 Lygus bugs per 100 net strokes in the Solomonsville cotton area. The infestations generally are higher in this area than in other sections of Graham County. The Lygus spp. populations in one seed alfalfa field were 53 per 100 net strokes, which is comparatively low."

NEW MEXICO: Many reports of insect damage to cotton have been received from Eddy and Chaves Counties. Cotton is still small but a high percentage of the small squares are blasted, presumably by the cotton fleahopper. Plans are being made to dust with a 5% DDT-sulfur mixture for hemipterous insect control in these counties.

TEXAS: Cabbage Looper (Trichoplusia ni (Hbn.)): During the last week of June in the El Paso Valley larvae tentatively determined as cabbage loopers were collected in 6 of 24 cotton fields examined. Loopers were also reported in cotton fields in Marana and Sahuarita districts of Pima County in the Santa Cruz Valley of Arizona.

Plant bugs and stink bugs: In the El Paso Valley no sweepings were made on cotton in 1946 until after the middle of July. This year's records show that there were more injurious Hemiptera on cotton during the latter part of June 1947 than during the latter part of July last year. These insects consisted chiefly of Lygus spp., with Adelphocoris in much smaller numbers. The only stink bugs reported from cotton this season are a few Thyanta custator. Although the average collections in 24 fields during the week ending June 27 was only 8.8 injurious specimens per 100 strokes with a net there were 8 fields in which more than 12 specimens were collected per 100 strokes. The two highest records were 25 and 33 injurious specimens per 100 strokes.

July 10, 1 9 4 7

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